100 c ag actagagtette<u>g</u>teceageeeg<mark>WacKa</mark>ateatgaacetaegeggggggggcct <del>8</del>-90 3-1 8 80 intermediate TGATCTCAGAAGCCAAGCAGGGTCGGGCCTGGTT 9 99 09 90 A block 9-7 20 - 20

FIG. 1

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FINGER 2

FINGER 3

FIG. 2B



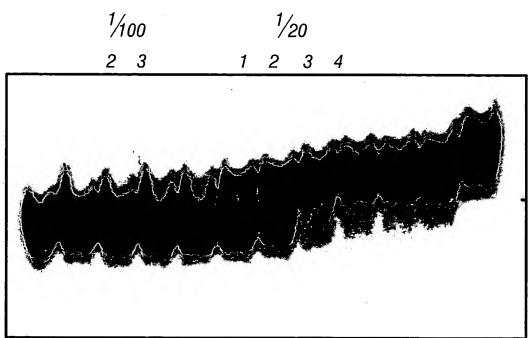


FIG. 3

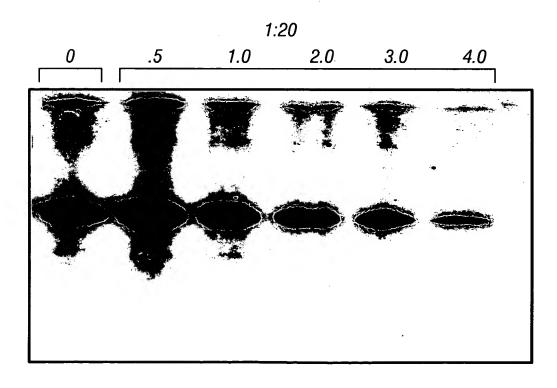
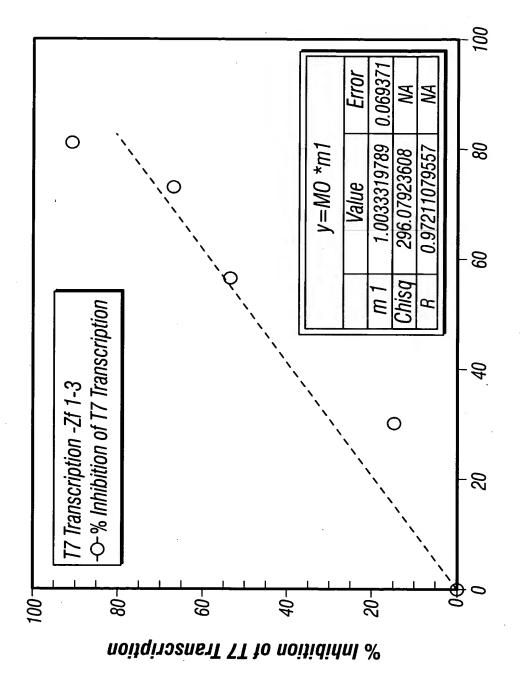


FIG. 4



% DNA Molecules Bound by Zf 1-3

FIG. 5

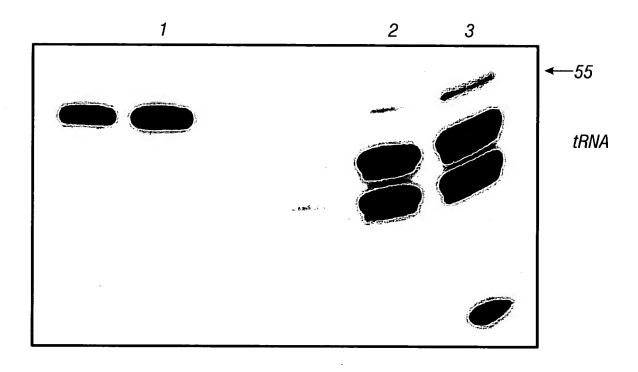


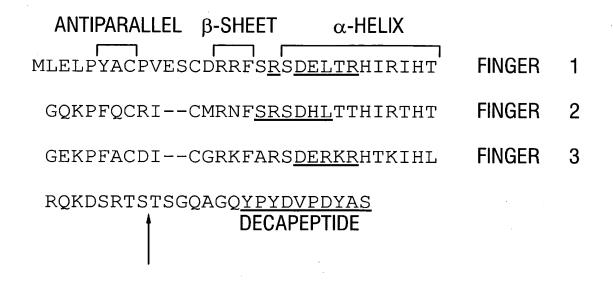
FIG. 6

			^								
	TCT	AGA	S		AAG	TTC	R>		CAC	GTG	R>
	$\Gamma TT$	<b>4</b> AA	E		CAG	GTC	Ø	140	$\overset{\star}{\mathit{GAC}}$	CTG	D
40	¢ CGC	$\mathcal{GCG}$	R	90	* GGC	CCG	Ŋ		AGT	TCA	S
	CGC	$\mathcal{GCG}$	R			LGT	$\mathcal{L}$			GCA	
	SAT	CTA	D		CAC	GLG	臣	30	, ÅGT	TCA	Ŋ
	TGC	ACG (	Ċ	80	$\overset{\star}{ATC}$	TAG	Ι	7	TTC	AAG	Ħ
30	TCC	AGG	Ŋ		CGC ATC (	$\mathcal{B}\mathcal{C}\mathcal{B}$	R		AAC	TTG	Ν
	GAG	CTC	囝		ATC	TAG	Ι		CGT	GCA	R
	GTC	CAG CTC	Λ	20	* CAT ATC	GTA	E	120	ATG	TAC	M
20	CCT					$\mathcal{GCG}$			TGC	ACG	Ċ
	TGC	ACG	Ċ		ACC	LGG	$\boldsymbol{L}$		ATA	TAT	$\boldsymbol{L}$
	GCT	CGA	A		CTT	GAA	T	110	CGA		R
10	${}^\star_{TAT}$	ATA	$\succ$	09	* GAG	CLC	E		TGT	ACA	C
	$\mathcal{CCC}$	999	Ь		GAT	CTA	D		CAG	GTC	Ø
	GAG	CTC	囝		DDL	AGC	S	100	CCC TTC	AAG	F
	CTC GAG CCC TAT G	GAG	T	20	GGC TCG GAT GAG	$\mathcal{GCG}$	R	71	CCC	999	Ъ

FIG. 74

190	$\overset{\star}{TGT}$	ACA	ŝ	240	*	CAT	GTA	E>				
7	$\mathcal{CCC}$	CGG	А			AGG	TCC	K				
	TTT	AAA	F			AAG	TTC	X				
	CCT	GGA	Ъ	230								
180	* AAG	TTC	K			GAA	CTT	E				
	GAG	CTC	E			GAT	CTA	D		AGT	TCA	\$
		CCG		220	*	AGT	TCA	S	270	$^{\star}_{ACT}$	TGA	$\boldsymbol{L}$
170	* ACA	TGT	$\boldsymbol{L}$	2		AGG	TCC	R		GAC	CTG	E
	CAC	GTG	臣			$\mathcal{CCC}$	CGG	Ą		AAG	TTC	K
	ACC	TGG	I			TTT	AAA	F	260	CAG	GTC	Ø
09,	CGC	$\mathcal{CCG}$	R	210	*	AAG	TTC	K		AGA	TCT	K
7	ATC	TAG	I			AGG	LCC	R			AAT	
	CAC	GTG	H			999	CCC	B	250	$\overset{\star}{CAT}$	GTA	E
150	ACC C	TGG	$\boldsymbol{L}$	200	*	LGT	ACA CCC	Ö	Ö	ATC	TAG	Ι
	ACC	TGC	$\mathcal{L}$	-		ATT	CTG TAA	Ι		AAA	TTT	K
	CTT	GAA	Т			GAC	CIG	D		*ACG AAA ATC CAT	TGG	L

FIG. 7B



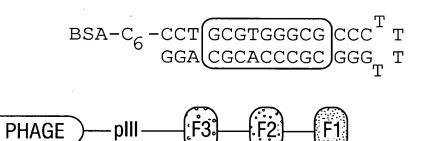


FIG. 8A

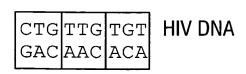
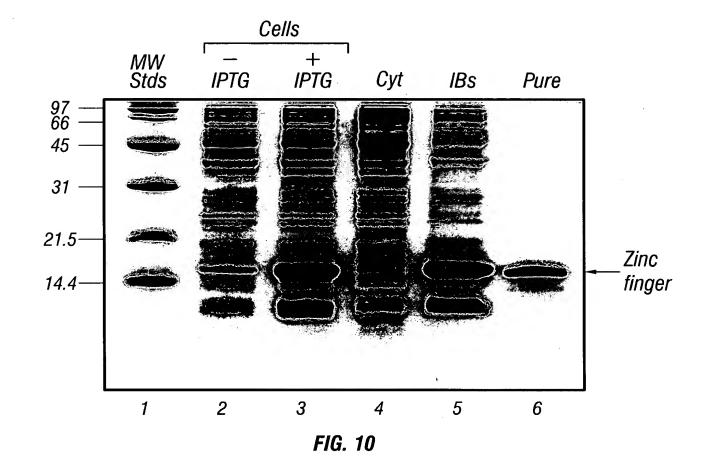


FIG. 8B

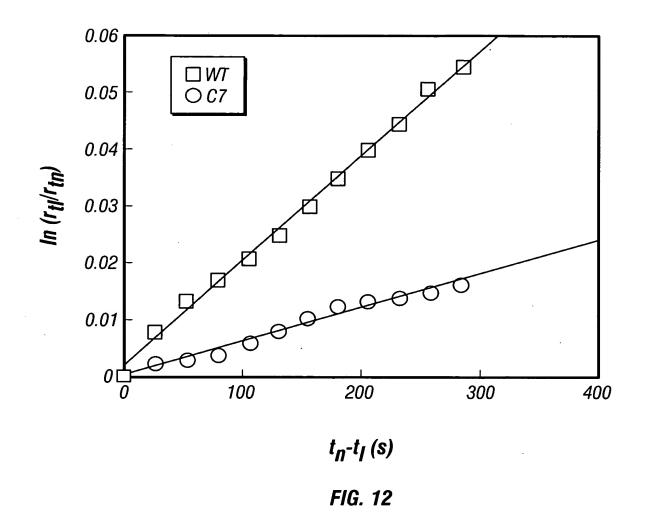
								9/2	26								
	SELECTION	CTG	-123456		NVGDKP	SWICGI	IAWMEL	IMMTFF	RECRML	IALLDT	NVQGLR						,
	FINGER 3	Ŋ	-123456	RDERKR-(WT)	RDLANS	SGQWWR-(A14)	SLLVIA	RGL									3 3 
TEINS	<u> </u>	909	-12	RDE	RDL	SGO	SLL	VSVRGL									
AMINO ACID SEQUENCES OF SELECTED ZINC FINGER PROTEINS	SELECTION	TIG	-2-11234		GVTMQP-(G3)	PQPLSD	REQVSR- (G4)	THMMMI	QRMRTL- (G5)	QRVGLF	LRTGNY-(G6)	EREFSL	EKESRG	EGVRKN	IGNNSI	TQARPP	THMWMI
<b>EQUENCES OF SELECT</b>	FINGER 2	TGG	-2-11234	SRSDHL-(WT)	TYLNTP	GYRAAP	LYRYHL	PTLVNA	VRPHQR	PFCPYR							
AMINO ACID SE	SELECTION	TGT	-123456		QTASKA-(F8)	PTHLQT-(F15)	PERTQP	TSEADH	SEQRYP	HQQNKP	RGQGMA	RARQTG	ENSFID	NVMGHD	NRGQRK	SRPSQW	TSEADH
	FINGER 1	909	-123456	RDELTR-(WT)	KADLKR- (C7)	KCVRGR-(C9)	KCDRGR	KYCRTR	KQLPWT-(C10)	KNSQHP	KCQMDS	QQVTRT	TQSQSP	VHIQAN			

## FIG. 9





							•																		
KINETIC AND EQUALIBRIUM DISSOCIATION CONSTANTS OF ZINC FINGER PROTEINS	Kd/Kd (TARGET)		1	12.6		1	108.8	-	39.3	1	1.9	1	3.6		4.5	1	1.4	1	3.6	1	1.7	1	4.3	1	38.2
<b>TS OF ZINC FI</b>	$\kappa_{d(x10^{-9})}$	(M)	6.5	81.8	6.3	0.5	54.4	6.5	255.6	25.0	46.7	29.7	108.3	41.6	188.9	15.9	22.2	6.4	22.8	27.5	47.9	4.6	20.0	13.1	200.0
TION CONSTANT	K OFF (x 10 <sup>-4</sup> )	(S-1)	$2.0\pm0.1$	$9.0 \pm 1.0$	$1.5\pm0.7$	$0.4\pm0.1$	$4.9\pm 2.0$	$1.3\pm0.3$	$23.0 \pm 3.0$	$4.5\pm 2.0$	$1.4\pm0.1$	$11.0 \pm 1.5$	$52.0 \pm 0.9$	9+	$17.0 \pm 1.7$	2.7±0.2	$6.0 \pm 0.2$	$2.1\pm0.1$	$5.7 \pm 0.2$	$2.2 \pm 0.02$	$9.1 \pm 0.1$	$4.6 \pm 0.3$	$1.4\pm0.1$	$1.7 \pm 0.0$	$10.0 \pm 0.4$
IUM DISSOCIA	BINDING KON(X104)	$(M^{-1}S^{-1})$	$3.0 \pm 0.04$	$1.1 \pm 0.2$	$2.4 \pm 0.4$	$8.0 \pm 0.7$	$0.9 \pm 0.1$	$2.0 \pm 0.2$	$0.9 \pm 0.1$	$1.8 \pm 0.1$	$0.3 \pm 0.002$	$3.7 \pm 1.0$	$4.8 \pm 0.1$	$1.9 \pm 0.1$	$0.9 \pm 0.3$	$1.7 \pm 0.2$	$2.7 \pm 0.3$	$3.3 \pm 0.2$	$2.5 \pm 0.6$	$0.8 \pm 0.1$	$1.9 \pm 0.2$	$10.0 \pm 1.0$	$0.7 \pm 0.1$	$1.3 \pm 0.1$	$0.2 \pm 0.0$
QUALIBR	BINDING	SITE	909	191	909	909	167	909	191	909	191	191	909	161	909	911	166	911	166	<i>11</i> 6	166	<i>11</i> 6	166	909	CTG
KINETIC AND E	ZINC FINGER	PROTEIN	TM.			20		60		C10		£8		F15		63		64		65		99		A14	



					•		
	CGC GCG RV		\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$		AGT TCA S>	o*	TTT AAA F>
	CGC GCG R		ACA TGT T	140	CGT GCA R	190	CCT GGA P
40	GAT CTA D	8*	CAC GTG H	·	AGT TCA S		AAG TTC K
	TGC ACG C		ATC TAG I		TTC AAG F		GAG CTC E
	TCC AGG S		CGC GCG R	۶ 8×	AAC TTG N	180	9 000 000
	GAG CTC E	08 *	ATC TAG I	<del>+</del>	CGT GCA R		ACA TGT T
30	GTC CAG V		CAT GTA H		ATG TAC M		CAC GTG H
	CCT GGA P		CGC GCG R		TGC ACG C	170	ACC TGG T
	TGC ACG C	<b>0</b> *	ACC TGG T	120	ATA TAT I	•	CGC GCG R
20	GCT CGA A	1/	CTT GAA L		CGA GCT R		ATC TAG I
	TAT ATA Y		GAG CTC E		TGT ACA C	160	CAC GTG H
	CCC GGG P		GAT CTA D	2.*	CAG GTC . Q	<del>*</del>	ACC TGG T
10	CTC GAG L	09	TCG AGC S	•	TTC AAG F		ACC TGG T
·	GAG CTC E		CGC GCG R		CCC CCG		CTT GAA L
	CTC GAG L		TTT TCT AAA AGA F S	100	CAG AAG GTC TTC Q K	150	CAC GTG H
	ATG TAC M	<del>2</del> 0	TTT AAA F	1(	CAG GTC Q		GAC CTG D

FIG. 13A-1

									INKER					
240	*	AAG	J.T.T.	$\stackrel{\wedge}{\simeq}$			GGT	CCA	Ĝ			AAC	$\mathtt{TTG}$	Ś
		CGC		ሺ			GGT	CCA	ტ			CAA	$\operatorname{GTL}$	ø
		GAA		臼	<u>۾</u>	*	GGC	SCG	Ŋ	330	*		CGC	A
230	*	GAT	CTA	Ω	ಷ		AGT	TCA	ഗ				TTT	M
		AGT	TCA	ഗ			ACT	$\operatorname{TGA}$	⊢			TTG	AAC	П
		AGG	.T.	М			CCC	GGG	Д	320	*	ACC	IGG	T
0	*	225		A	270	*		$_{ m IIC}$					$_{ m LLL}$	X
220		TTT	AAA	Ŀц			CAG	GIC	Ø			GTG	CAC	Λ
		AAG	TTC	×			GGT	CCA	ധ	0	*	AAA	TTT	М
		AGG	T.C.	ĸ	260	*	ACC	$^{ m LCG}$	⊢	3		GAA	CII	囝
210	*	999	$\mathcal{C}$	Ŋ			CAT	GTA	田			GAG	CIC	ы
		TGT	ACA	ပ			ATC	TAG	Н			CIG	GAC	L
		ATT	TAA	Н		*	AAA	$_{ m LLL}$	×	300	*	CGG	CCC	В
200	*	GAC	C.I.G	Ω	25		ACC	$^{ m LGG}$	Н			CCC	CGG	А
- 4		TGT	ACA	Ö			CAT	GTA	н		•	ATC	TAG	Н
		225	550	Ø			AGG CAT A	ICC	ሺ	290	*	CGG	CCC	R I A

FIG. 13A-2

	CAG GTC Q>		*	TAC	ATG	Şı						
380	ď H	430	•			Ø					•	
(,)	GTG CAC V	1		GGC	SSS	ტ						
	CAG GTC Q	: : :		205	.CGG	A						
0 +	GAA CTT E	420	*	CAG	GIC	Õ						
370	AGG GAA TCC CTT R E			CGC	CCG	Ŋ						
	CTC GAG L				TCG	ഗ		0	*	TAA	ATT	/ *
	ATG TAC M	410	*	CAC GCT	CGA	А	0-4	460		$_{ m ICI}$		۲
360	AAC TTG N	7		CAC	GTG (	Н				GCT	CGA	۲
	950 CGG	:		AAC	TIC	N				TAC	ATG	>
	ACC TGC T	0	*	ATG	CAG TAC	Σ		450	*	GAC	CTG	
350	TCC AGG S	400		GTC ATG	CAG	Λ				SSS	CGC	ב
(.)	909 CGC A				TTT	Ж				GLL	CAA	
	CTG GAC L			CAG	GIC	ŏ		40	*.	GAC	CTG	_
<u>o</u> , †		390	*	AAA	$_{ m LLL}$	×		4		TAC	ATG	>
340	TCC AGG S			CTT	GAA	긔				SSS	CGC	ב

DECAPEPTIDE TAG

FIG. 13B

CGC GCG R>	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	AGT TCA S>	90 * TTT AAA E>
0.00 0.00 0.00 0.00	ACA TGT T	140 * CGT GCA R	CCT GGA
40 * GAT CTA D	90 * CAC GTG	AGT TCA	AAG TTC K
TGC ACG	ATC TAG I	TTC AAG F	GAG CTC E
TCC AGG S	CGC GCG R	O * AAC TTG N	180 * GGC CGG G
GAG CTC E	80 * ATC TAG I	13 CGT GCA R	ACA TGT
30 * * GTC CAG	CAT GTA H	ATG TAC M	CAC GTG H
CCT GGA P	CGC GCG R	TGC ACG C	170 * ACC TGG
TGC ACG	70 * ACC TGG	120 * ATA TAT I	CGC GCG R
20 * GCT CGA A	CTT GAA L	CGA GCT R	ATC TAG I
TAT ATA Y	GAG CTC E	TGT ACA C	160 * C CAC G GTG
000 000 0	GAT CTA D	110 * CAG GTC	16 ACC TGG
10 CTC GAG	60 * * TCG AGC	TTC AAG F	ACC TGG T
GAG CTC E	CGC GCG R	000 000 P	CTT GAA L
CTC GAG L	TCT AGA S	)0 * AAG TTC K	150 * CAC GTG
ATG TAC M	50 * TTT AAA F	10 CAG GTC Q	GAC CTG D

240	AAG TTC K>		GGT CCA G>		AAA TTT K>
	CGC GCG R		GGC GGT GGT CCG CCA CCA		GAA AAA CTT TTT E K>
	GAA CTT E	280	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	330	GAC CTG D
230	GAT CTA D	32	AGT TCA S L		GAA CTT E
	AGT TCA S		CCC ACT AGG TGA T		CAG CTG GG GTC GAC C
	AGG TCC		CCC 666 P	320 *	CAG GTC Q
220	, GCC CGG A	270	AAG TTC K		GAC CTG D
2.	TTT AAA F		CAG GTC Q		ACC TGG T
	AAG TTC K		ACC GGT TGG CCA T G	<u> </u>	GCG GAA ACC CGC CTT TGG A E T
	AGG TCC R	260	ACC TGG T	က်	GCG CGC A
210	GGG AGG A		CAT GTA H		CAG GTC Q
	TGT ACA C		ATC TAG T		CTG GAC L
	GAC ATT CTG TAA D I	) 20 *	AAA TTT K	300	GAC ACC CTG CTG TGG GAC D T L
200	GAC CTG D	72	ACC TGG T		GAC CTG D
	TGT ACA C		CAT GTA H		ACC TGG T
	000 000 000		AGG ( TCC ( R	290	CTG ACC GAC TGG L T

FIG. 14A-2

	A H		430	TAC	Şı IK					
380	GAA	ഥ	4	CAG	a					
	AAA TTT	×		GGC	Ů		÷			
	(') (')	ഥ		CCC						
370	AAA TTT	ᅜ	420	CAG	O					
37	O	니	•	GGC	Ů					
	CTG	니	•	AGC	Ø	460	*	$\mathtt{TAA}$	ATT	^ *
	Z	z	410	CAC GCT CTT TGG	A	4		$_{ m ICI}$	AGA	လ
360	$\odot$	A	•	CAC	H			TAC GCT TCT	CGA AGA	A
	A	н		GCA	A			TAC	ATG	H
	$\odot$	ы	e *	CTG GCG GAC GTC	A	450	*	CCG GAC	CIG	
350	Z	E	400	CTG	니			SCG	299	머
		Q		ATC TGG	П			$_{ m GTT}$	CAA	>
		ᆈ		TTC	[Ŧ1	440	*	GAC	CTG	
340	TCC GCG AGG CGC	A	390 *	CTG GAG GAC TGG	臼	7		CCG TAC	ATG	H
ന്	TCC AGG	က		CTG	П			900	CGC	ᆈ

FIG. 14B

DECAPEPTIDE TAG

•	CGC GCG R>		ACT TGA T>		TTT AAA F>	06 *	GAG CTC E>
	GAT CTA D		CAC GTG H	140	CGC GCG	\$	9 222 999
요 *	TGC ACG C	8	ATC TAG I		CGC GCG R		ACC TGG T
7	TCC AGG S		CGC GCG R		GAT CTA D		CAC GTG H
	GAG CTC E		ATC TAG I	130 *	TGC ACG C	180	ATC TAG I
	GTC CAG V	80 *	CAT GTA H	+	TCC AGG S		CGC GCG R
30	CCT GGA P		CGC GCG R		GAG CTC E		ATC TAG I
	TGC ACG C		AAG TTC K		GTC CAG V	170	CAT GTA H
	GCT CGA A	02 *	CTG GAC L	120	CCT GGA P		CGC GCG R
<b>20</b>	TAT ATA Y		GAT CTA D		TGC ACG C		AAG TTC. K
	CCC GGG		GCT CGA A		GCG CGC A	160 *	CTG GAC L
	GAG CTC E		TCG AGC S	110	TAC ATG Y	7	GAT CTA D
0 +	CTC GAG L	09	AAG TTC K		CCG GGC P		GCT CGA A
·	CTG GAC L		TCT AGA S		AAA TTT K		TCG AGC S
	AAA TTT K		TTT AAA F	. 00 *	GAA CTT E	150 *	AAG TTC K
	ATG TAC M	*	CGC GCG R	<del></del>	9 922 299		TCT AGA S

FIG. 15A

240	AAG TTC K>		CCC 666
	TCT AGA S		AAG TTC K
	TTT AAA F	280 *	CAG GTC Q
230	CGC GCG R	2	GGT CCA G
2	CGC GCG R		ACC TGG T
	GAT CTA D		CAC GTG N
220	TGC ACG C	270	ATC TAG I
22	TCC AGG S		CGC GCG R
	GAG CTC E		ATC TAG I
	GTC CAG V	× *	CAT GTA H
210	CCT GGA P		CGC GCG R
	TGC ACG C		AAG TTC K
	GCT CGA A	250	CTG GAC L
\$00 *	TAT ATA Y	25	GAT CTA D
	CCC 666 P		GCT CGA A
	AAG TTC K		TCG AGC S

FIG. 15B

290 \* ACT ACT TGA TCA T S>

	000 000 80		900 000 000		AGT TCA S>	190 *	TTT AAA F>
	CGC GCG R		ACA TGT T	140	CGT GCA R	<del></del>	CCT GGA P
40	GAT CTA D	8	CAC GTG H		AGT TCA S		AAG TTC K
•	TGC ACG C	:	ATC TAG I		TTC AAG F		GAG CTC E
	TCC AGG S		CGC GCG R	30	AAC TTG N	180	9 9 9 9 9
	GAG CTC E	80 *	ATC TAG I	5	CGT GCA R		ACA TGT T
30	GTC CAG V		CAT GTA H		ATG TAC M		CAC GTG H
	CCT GGA P		CGC GCG R		TGC ACG C	170	ACC TGG T
	TGC ACG C	02 *	ACC TGG T	120	ATA TAT I		CGC GCG R
20 *	GCT CGA A		CTT GAA L		CGA CCT R		ATC TAG I
	TAT ATA Y		GAG CTC E		TGT ACA C	160	CAC GTG H
	CCC 666 P		GAT CTA D	110	CAG GTC Q	=	ACC TGG T
<u> </u>	CTC GAG L	09	TCG AGC S	*	TTC AAG F		ACC TGG T
•	GAG CTC E		CGC GCG R	·	CCC 666 P		CTT GAA L
	CTC GAĞ L		TCT AGA S	00 *	AAG TTC K	150	CAC GTG H
	ATG TAC M	*	TTT AAA F	10	CAG GTC Q		GAC CTG D
		•					

FIG. 16A-1

240	AAG TTC K>		GTC CAG V>		CAT GTA H>
	CGC GCG R		CCT GGA P		CGC GCG R
	GAA CTT E	280	TGC ACG C	330 *	ACC TGG T
230	GAT CTA D	28	GCT CGA A		CTT GAA L
	AGT TCA S		TAT ATA Y		GAG CTC E
	AGG TCC R		CCC GGG	320	GAT CTA D
220	GCC CGG A	270	AAG TTC K	(.,	TCG AGC S
2	TTT AAA F		GAG CTC E		CGC GCG R
	AAG TTC K		5 5 5 5 5 5 5 5 5		TCT AGA S
	AGG TCC R	260	ACC TGG T	310	TTT AAA F
210	000 000 000		CAT GTA H		CGC GCG R
	TGT ACA C		ATC TAG I		CGC GCG R
	ATT TAA I	250	AAA TTT K	300	GAT CTA D
200	GAC CTG D	2	ACC TGG T		TGC
	TGT ACA C		CAT GTA H		TCC AGG S
	950 CGG A		AGG TCC R	590 *	GAG CTC E

FIG. 16A-2

ന	340			350			360			37	370			380	
ATC TAG I	* ATC CGC TAG GCG I R	ATC TAG I	CAC GTG H	* ACA TGT	* ACA GGC TGT CCG T G	CAG GTC Q	* AAG TTC K	CCC 666	TTC AAG F	CAG GTC Q	* TGT ACA C	CGA GCT R	ATA TAT I	* TGC ACG	ATG TAC M>
	390			4	400 *		•	410 *			420 *			4	430
CGT GCA R	AAC TTC N	TTC AGT AAG TCA F S	AGT TCA S	CGT GCA R	AGT TCA S	GAC CTG D	CAC GTG H	CTT GAA L	ACC IGG T	ACC TGG T	CAC GTG H	ATC TAC I	CGC CCC R	ACC TCC T	CAC CTG H>
		440			450			460	09 *			470			480
ACA TGT	9 922 299	GAG CTC E	AAG TTC K	CCT GGA P	TTT AAA F	GCC CGG	TGT ACA C	GAC CTG D	GAC ATT CTG TAA D I	TGT ACA C	9 222 999	AGG TCC	AAG TTC K	TTT AAA F	GCC CGG A>
			490		-	\$00 *			510 *			27	520		
AGG TCC R	AGT TCA S		GAT GAA CTA CTT D E	CGC GCG R	AAG TTC K	AGG TCC R	CAT GTA H	ACC TGG T	AAA TTT K	ATC TAG I	CAT GTA H	TTA AAT L	AGA TCT R	CAG GTC Q	AAG TTC K>
530 *			540 *												
GAC CTG D		AGA TCT R	ACT TGA T	AGT TCA S>		•	FIG. 16R	89				, i			

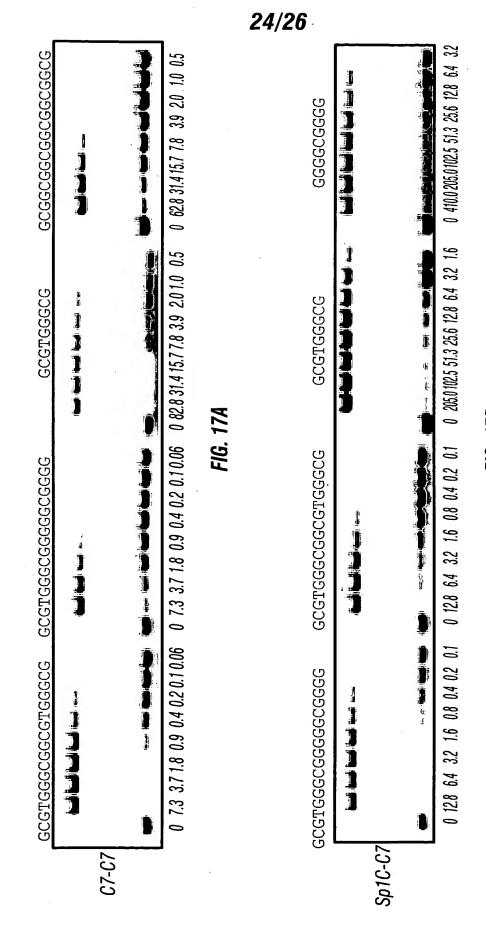


FIG. 17B

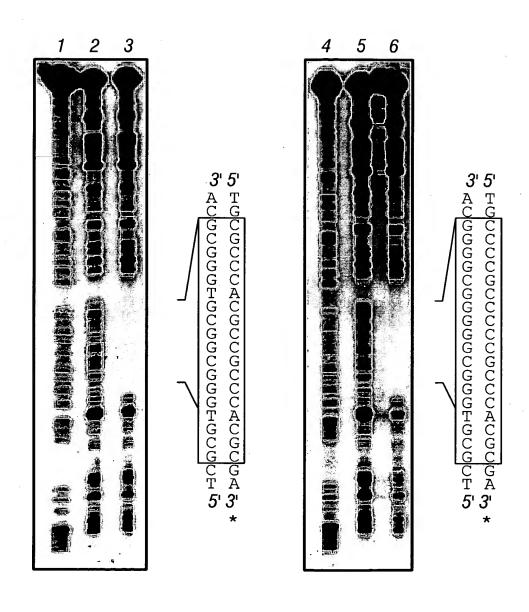


FIG. 18



